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TECHNICAL SERVICES FOR NATIONWIDE EMISSION INVENTORY OF POINT SOURCES FOR THE STATE OF NEW JERSEY. TASK ORDER NUMBER 11

IBM Federal Systems Division
Gaithersburg, Maryland

PREPARED FOR
Environmental Protection Agency
Durham, North Carolina

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Technical Services
for
Nationwide Emission Inventory of
Point Sources
for the State of New Jersey
Task Order Number 11

Basic Order Agreement No. 68-02-0043

Final Report

Prepared for the Environmental Protection Agency
Durham, North Carolina 27711

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Purpose and Scope

The purpose of this Task Order was to assist the EPA, the EPA Regional Office and interested State agencies in the preparation and compilation of National Emissions Data System (NEDS) coding forms for State of New Jersey facilities with estimated emissions of any pollutant over 100 tons per year or identified by Appendix C of the Federal Register dated August 14, 1971. The scope of this Task Order included:

1. The identification of those facilities within the State of New Jersey which emit over 100 tons per year of pollutant emissions of suspended particulates, sulfur dioxide, hydrocarbons, carbon monoxide or nitrogen oxides or facilities identified by Appendix C of the Federal Register of August 14, 1971.
2. The calculation of estimated emissions from available data using the 'Compilation of Air Pollutant Emission Factors' of February 1972.
3. The preparation of the NEDS coding forms as specified in Chapter 4 of the NEDS Manual APTD 1135 within the constraints of available data.

Approach

The approach taken in completion of this Task Order involved the following steps:

1. Review of State of New Jersey data provided by EPA, Durham, North Carolina, consisting of partially completed NEDS forms and the APCO output listings.

2. Identify facilities included in the 1970 emissions inventory which met the criteria of this Task Order for inclusion in the NEDS inventory.

3. Acquire all available 1970 emissions inventory questionnaires pertaining to the facilities identified in paragraph 2 and any additional questionnaires pertaining to facilities identified by the State of New Jersey as meeting the Task Order criteria but not included in the 1970 inventory.

4. Analyze the available questionnaires pertaining to the facilities identified, determine the estimated emissions and transfer the appropriate data to NEDS forms in accordance with Chapter 4 of the NEDS Manual.

5. Identify data missing from the prepared NEDS forms. Acquire, with the aid of the State of New Jersey, this data if available and enter on the appropriate NEDS forms. Figure 1 is a copy of the forms prepared for internal calculations and information and for identifying missing facility data to the State. Copies of the forms which identified missing data were provided to the State of New Jersey to be used as an aid in acquiring such data.

6. Determine the UTM coordinates for each facility and enter on the NEDS forms.

Source Name_____ Location_____

State_____ County_____ Plant ID_____ Point ID_____

SCC_____ Emission Factor Reference

Material_____ Page_____

Quantity/Year_____ Table_____

Emissions Calculations Source_____

Assumptions

Missing Data (use reverse side of page for additional entries)

Item	Check when Completed	Comment

Figure 1.

Assumptions

The following assumptions or groundrules were used in conjunction with Chapter 4 of the NEDS Manual in the preparation of the NEDS forms for the State of New Jersey:

1. Boiler Data

Boilers shall be coded one per NEDS form unless in the judgment of the analyst excessive data would result by not combining several small boilers. When boilers are combined:

a. The boiler capacity indicated shall be the total capacity for all boilers combined.

b. Fuel amounts are to be added to provide one total for each fuel type.

c. When multiple stacks are used, the stack data will be averaged and entered as such.

Boilers combining unusual liquid waste with fuel oil will have the liquid waste identified and a new SCC code will be provided by EPA.

2. Process Fuels

Process fuel use not specifically identifiable to a specific process will be coded on a NEDS form using a 'C' indicating the source, a general process IPP code, a zero (0) in the boiler capacity and the appropriate generalized combustion SCC code.

Process fuel known to be associated with a particular process but separately vented is to be coded on a separate NEDS form with appropriate IPP process and SCC codes used. When it is indicated that part of the process heat is used for space heating and the emissions are small compared to the process emissions, the need to separate space heating can be ignored.

When fuel use is not identified as being for a boiler or used in a process, the following technique is to be used:

a. If the industry is not known to use significant heating in its process, the fuel used will be considered as consumed in boilers.

b. If the industry is one which uses significant heating in its process, such as the refining, cement and asphalt industries, the fuel used will be considered as used in combustion sources.

3. Process Combustion Emissions

For those pollutants identified as being emitted from the associated process, an emission factor of zero (0) will be assumed for the fuel combustion emissions.

For those pollutants not emitted by the associated process, emission factors will be applied using the factors provided for the most similar boiler. The results of these calculations will be entered in the emission estimate fields of Card 4. Appropriate corrections for control devices will be made, if applicable.

4. Asphalt Dryers

The dryer used in asphalt batching will be assumed to be a rotary dryer, unless specified otherwise, and the appropriate SCC code will be used.

5. Petroleum Refineries

EPA will provide an SCC code for the Internal Combustion Engine/ Compressor used in petroleum refineries.

Generalized leakage emissions from petroleum refineries shall be assumed to be emitted at a plume height of zero (0). The height of emissions from storage tanks will be left blank unless the average height of the tanks is known.

6. Zero Emission Sources (non-Federal)

Any source within a facility meeting the NEDS criteria, which emits to the atmosphere basically zero tons per year of each of the pollutants may be excluded from the inventory. This includes sources which achieve low emissions through the use of pollution control devices.

7. Federal Facilities

NEDS forms will be prepared for all federal facilities included on the listings provided by EPA.

8. NEDS Forms

Newly prepared NEDS forms will be prepared for each facility using basic data from inventory questionnaires. This was necessary since the emission inventory computer printouts prepared at Research Triangle Park, North Carolina by EPA in August 1971 did not lend themselves to the preparation of NEDS forms as specified in the NEDS Manual. This was due to the grouping of stacks and boilers for individual facilities as provided for in the ground-rules for the 1970 New Jersey inventory. The partially completed NEDS forms, therefore, could not be easily used.

Meetings

1. On August 16, 1972 the first meeting concerning Task Order 11 was held at the New Jersey State Department of Environmental Protection, Trenton, New Jersey. Participants at the meeting were, Mr. I. Kaplan and Mr. J. Myers of IBM, Mr. G. Marciante, EPA Region 2, Mr. A. MacQueen, EPA, Durham, North Carolina and Mr. W. Munroe, Mr. V. Marchansi, Mr. R. Pfannenstiel and Mr. J. DePierro of the New Jersey DEP.

   The State of New Jersey agreed to cooperate to the extent possible in providing any additional and identified required information necessary for the preparation and completion of the NEDS forms. In relation to this, questionnaires not at IBM would be provided if available and arrangements would be made for visits to the New Jersey DEP Field Offices in Springfield, Trenton and Pennsauken. These field visits were to be for the purpose of obtaining any available missing information and to identify, if possible, facility UTM coordinates when locations were uncertain. At this meeting, street maps for 20 New Jersey counties were made available to aid in determining UTM coordinates and additional questionnaires for EPA - New Jersey Region 043 were provided for review and possible inclusion in the NEDS inventory.

2. On August 28, 1972, Mr. J. Gleason and Mr. L. Taylor of IBM conferred at Trenton, New Jersey with Mr. R. Pfannenstiel and Mr. J. DePierro of the New Jersey DEP. Additional questionnaires for Regions 045, 150 and 151 were obtained for review and arrangements were made for visits to the three New Jersey field offices.

   State personnel expressed the consensus that any missing and required information that could not be obtained from the state field offices also would not be available at the specific facility of concern.

3. Visits were made to the three New Jersey DEP Field Offices during the month of September. The purpose of these visits was to have access to field office files and obtain any additional information missing from the facility questionnaires for use in completing the NEDS forms. The three field offices visited were:

   a. Central Field Office, Trenton, New Jersey Mr. Rzigalinski, September 19, 1972

   b. Metro Field Office, Springfield, New Jersey Mr. L. Marshall, September 25, 1972

   c. Southern Field Office, Pennsauken, New Jersey Mr. B. Sullivan, September 28, 1972.

Results

The original and one copy of the National Emissions Data System (NEDS) Point Source Forms for the State of New Jersey completed under Task Order 11, Basic Order Agreement 68-02-0043 was forwarded to the Environmental Protection Agency, Durham, North Carolina.

Information was entered upon the NEDS forms in accordance with Chapter 4 of the NEDS Manual, special instructions contained in the EPA letter of August 4, 1972, 'Coding of Federal Point Source Information on NEDS Data Forms,' additional instructions received from EPA and specific groundrules and assumptions stated in a previous portion of this report.

NEDS forms were completed for a total of 337 facilities, 295 of which were non-U.S. Government facilities meeting the NEDS criteria and for which 1970 inventory questionnaires were available. The total number of NEDS forms processed was 1877, 213 of which pertained to U.S. Government facilities.

A final review of the NEDS forms was accomplished during the first portion of December 1972 and a total of 392 forms, pertaining to non U.S. Government facilities were eliminated. Of these 284 were removed due to zero (0) tons per year emissions and 108 due to combining like processes and small boilers. The final number of NEDS forms submitted for inclusion in the NEDS system was reduced to 1485. This number represents 901 forms for Region 043, 465 forms for Region 045, 98 forms for Region 150 and 21 forms for Region 151.

UTM coordinates were determined for all facilities having an identifiable address. Several U.S. Government facilities did not have a specific address available, consequently UTM coordinates were not established. The State of New Jersey had no information on file pertaining to the U.S. Government facilities identified on the EPA provided printouts.

To supplement State of New Jersey questionnaires and information pertaining to electric generating plants, Federal Power Commission Form 67 s were provided by EPA for the following:

1. Atlantic City Electric Company Deepwater Station, B.L. England Station and Missouri Avenue Station.
2. Jersey Central Power and Light Company Sayreville Station and Madison Avenue - Punch Bowl Station.
3. Public Service Electric and Gas Company Bergen Station, Burlington Station, Essex Station, Hudson Station, South Kearney A and B Stations, Linden Station, Marion Station, Mercer Station and Sewaren Station.